

Manufacturer's Certification

Report Date: 8/7/2025

We hereby certify that CalPortland Type III Cement meets the standard requirements of ASTM C150 and AASHTO M85 specification for Type III cement. Reported are the average chemical and physical data for the month.

Lot #: 25-174_III

Type III Cement

Source: SsangYong, So. Korea

Chemical Properties, (ASTM C114)	ASTM C150 and AASHTO M85 Requirements		Limestone	
	Type III	Analysis Results	Analysis	
Silicon dioxide (SiO ₂), %	---	20.3	8.8	
Aluminum oxide (Al ₂ O ₃), max, %	---	4.7	3.2	
Ferric oxide (Fe ₂ O ₃), max, %	---	2.8	1.5	
Calcium oxide (CaO), %	---	61.5	43.8	
Magnesium oxide (MgO), max, %	6.0	4.6	3.4	
Sulfur trioxide (SO ₃) ¹ , max, %	3.5	3.5	0.1	
Loss on ignition (LOI), max, %	3.5	0.8		
Insoluble residue (IR), max, %	1.5	0.2	Base	
Alkalies (Na ₂ O+0.658*K ₂ O), %	---	0.58	Cement	
Tricalcium silicate (C ₃ S), %	---	50	50	
Dicalcium silicate (C ₂ S), %	---	21	21	
Tricalcium aluminate (C ₃ A), max, %	15	8	8	
Tetracalcium aluminoferrite (C ₄ AF), %	---	9	9	
CO ₂ , %	---	0.2		
Limestone addition, max, %	5.0	0.4		
CaCO ₃ in Limestone, min, %	70	87		

Physical Properties

Air content of mortar, max, volume %, (C185)	12	6
Blaine Fineness, min, m ² /kg, (C204)	---	585
Autoclave expansion, max, %, (C151)	0.80	0.17
Compressive Strength, min, (C109)		
1 Day, MPa	12.0	20.5
1 Day, psi	1740	2970
3 Day, MPa	24.0	30.5
3 Day, psi	3480	4430
7 Day, MPa	---	35.0
7 Day, psi	---	5070
28 Day (from prior lot), MPa	---	46.5
28 Day (from prior lot), psi	---	6750
Vicat Setting Time, min-max, minutes, (C191)	45-375	80
Reflectance by Hunter Lab, L-Value	---	59

Apparatus and methods used in this laboratory have been checked by the Cement and Concrete Reference Laboratory of the National Institute of Standards and Technology. A copy of the report detailing their findings is available upon request. Major oxides are analyzed in accordance with ASTM C114.



X. Schlee

Quality Control Manager